

BIO 207

Prof Joel Levine

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Welcome to Genetics

Two Global Objectives for this course

1. Self-directed integrative learning
2. Fundamental understanding of mechanisms of inheritance

What do we know and how do we know it?

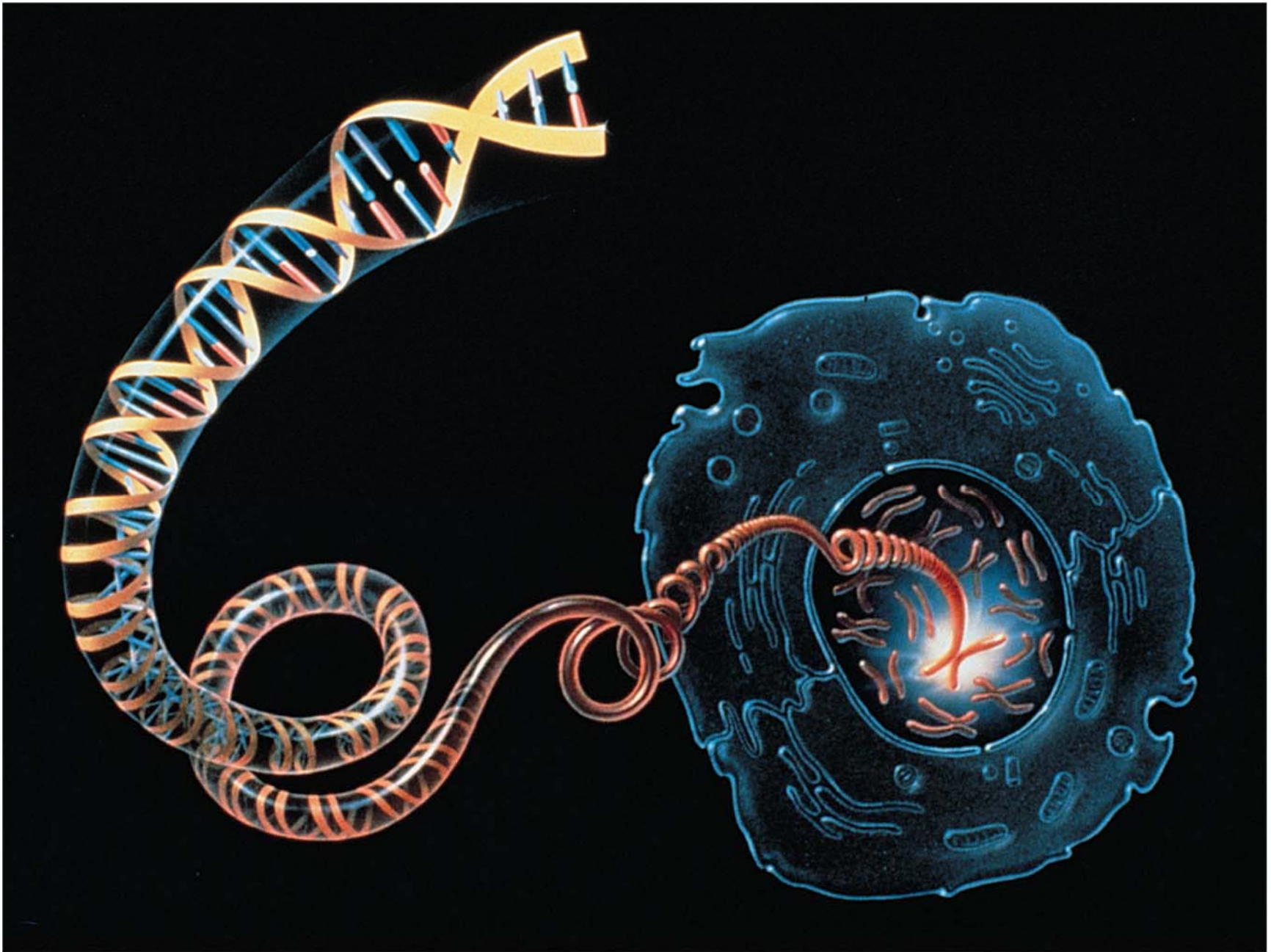
- Our Approach: A Genetics Study Group
- How to Use Text Book

iGenetics *A Mendelian Approach* by Peter J. Russell

- Material, Activities and Problem Solving
(Lectures, Classroom, and other Study)

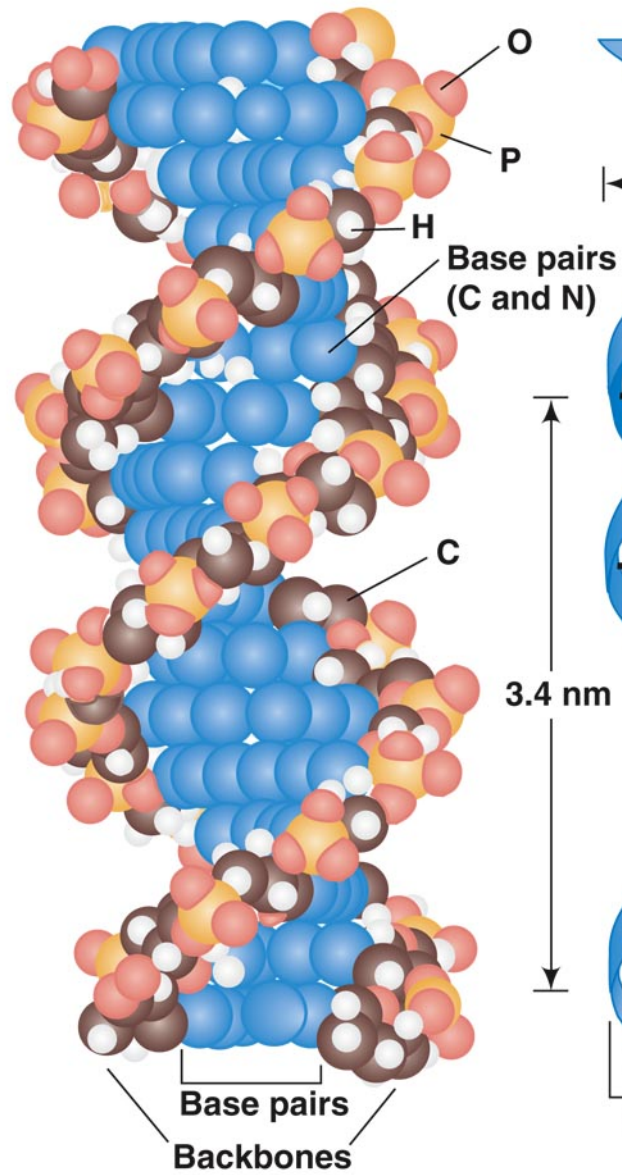
- Syllabus is on BB
- TA assignments are fixed
- Problem assignments
- Evaluation: 3 mid-terms (20% each), Quizzes (10% total), Final (30%). Format of Exam is Multiple choice. Resource for basics - the academic skills center.
- ...Excuses...
- Office Hours by appt and arranged by email.

- UNIT 1 Background
- Objective: a broad review, a tune-up, a reminder...setting expectations.

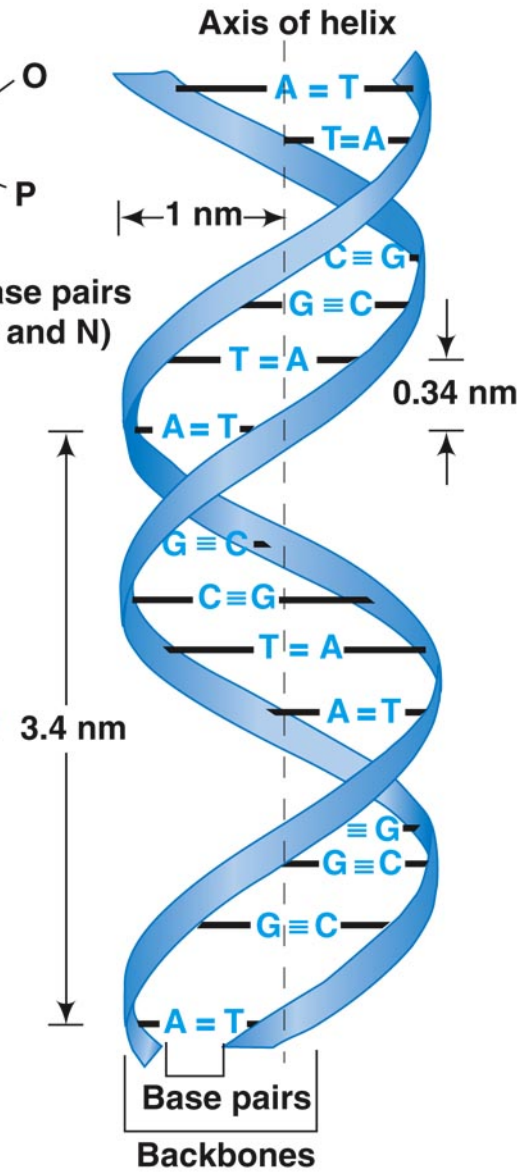


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a) Molecular model



b) Stylized diagram





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P (parental) generation	YY	x	yy
Parental phenotype	yellow		green
	seeds		seeds
Haploid gametes	Y		y

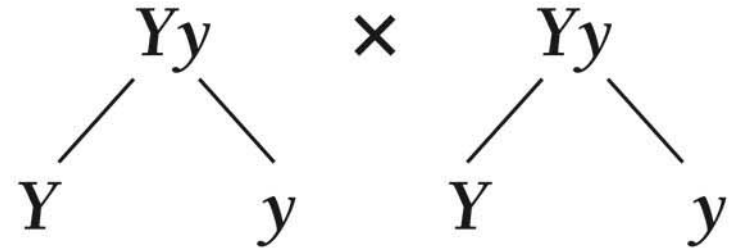
F1 generation	Yy
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F1 phenotype	Yellow because Y is dominant to y; y is recessive to Y
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When F_1 plants are crossed:

$F_1 \times F_1$

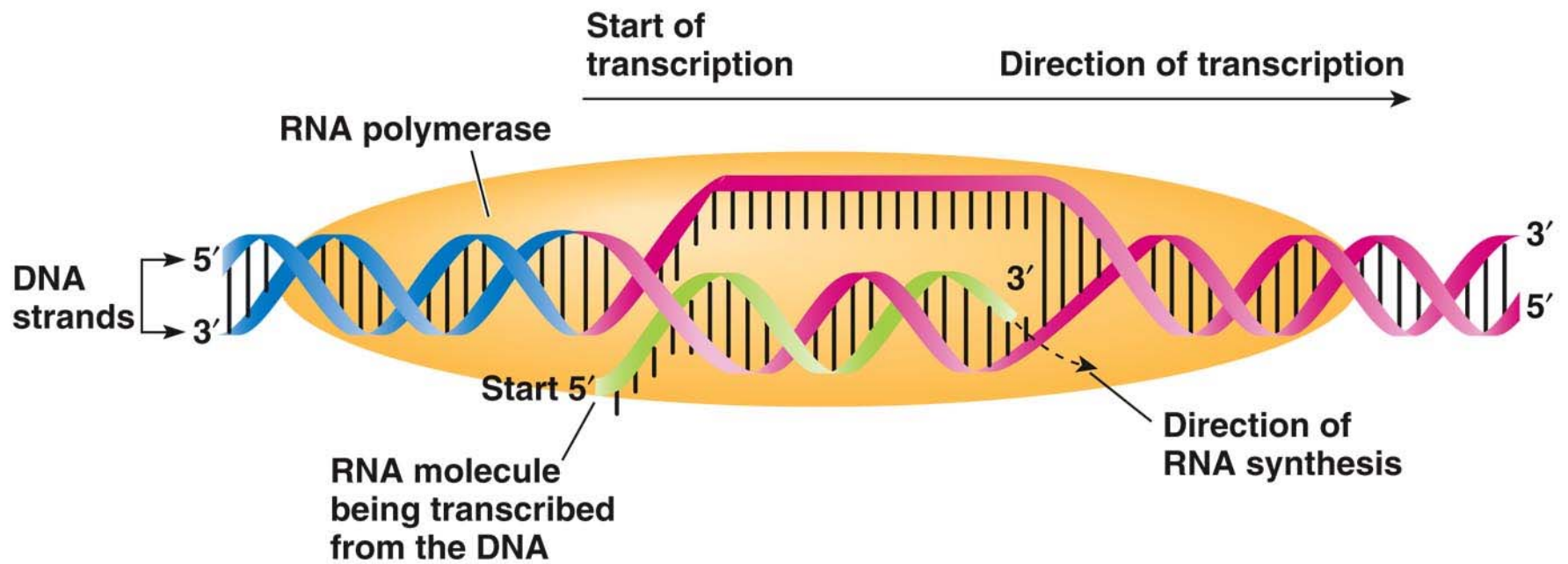
F_1 gametes

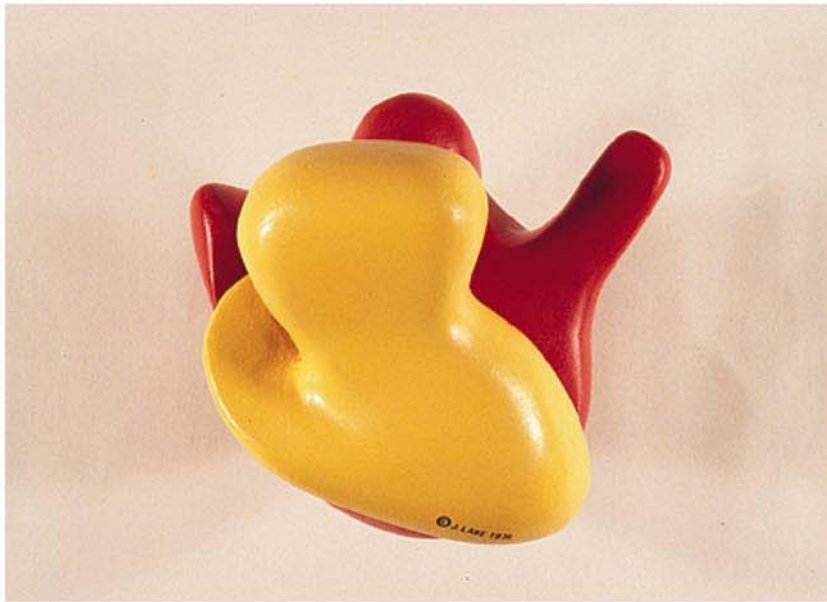


The F_2 generation is produced by random fusion of the gametes as follows:

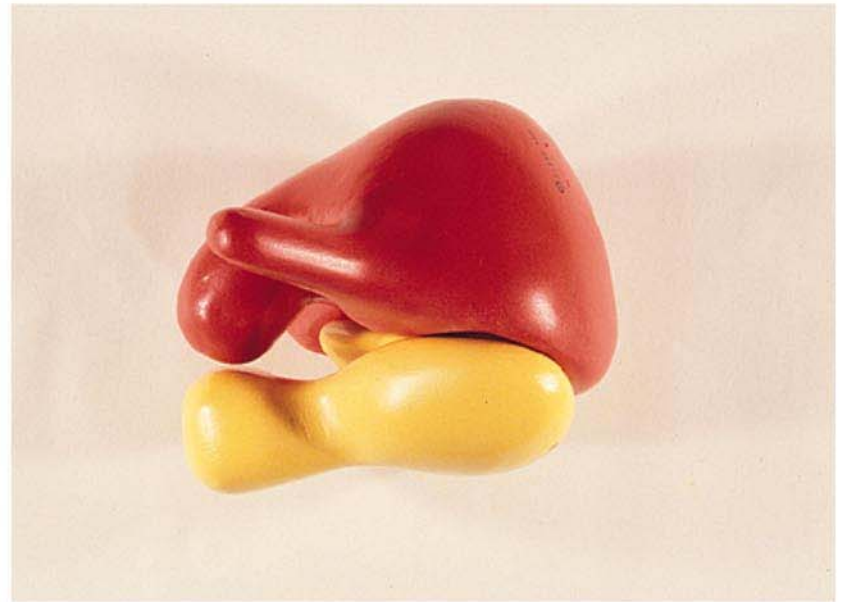
F_2 generation

	Y	y
Y	YY	Yy
y	Yy	yy



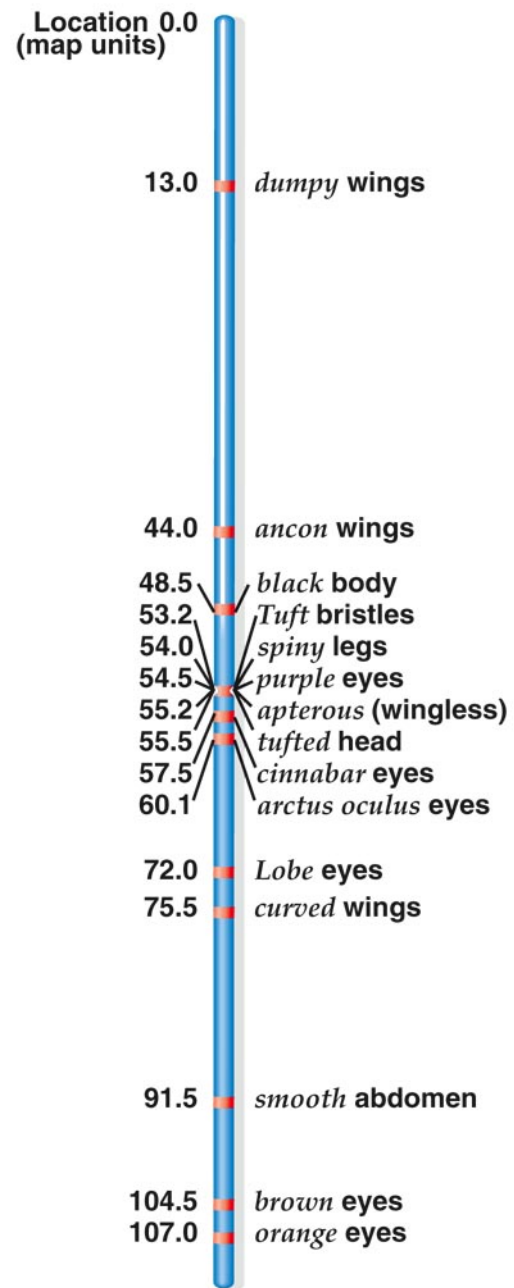


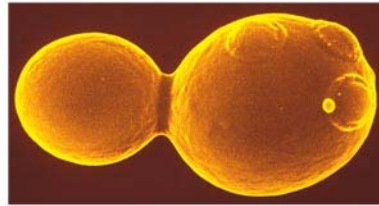
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a)



b)



c)



d)



e)



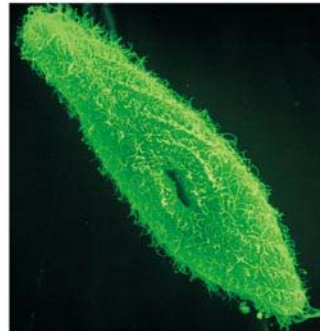
f)



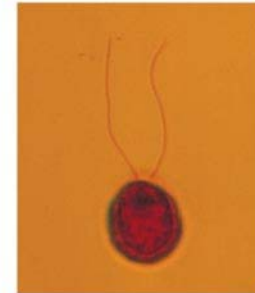
g)



h)



i)



j)



k)



l)



m)

a) Plant cell

Large
central
vacuole

Tonoplast

Chloroplast

Plasmodesmata

Cell wall

b) Animal cell

Cytoskeleton

Peroxisome

Mitochondria

Ribosomes

Nuclear
envelope

Nuclear pore

Chromatin

Centrioles

Nucleolus

Rough
endoplasmic
reticulum

Nucleus

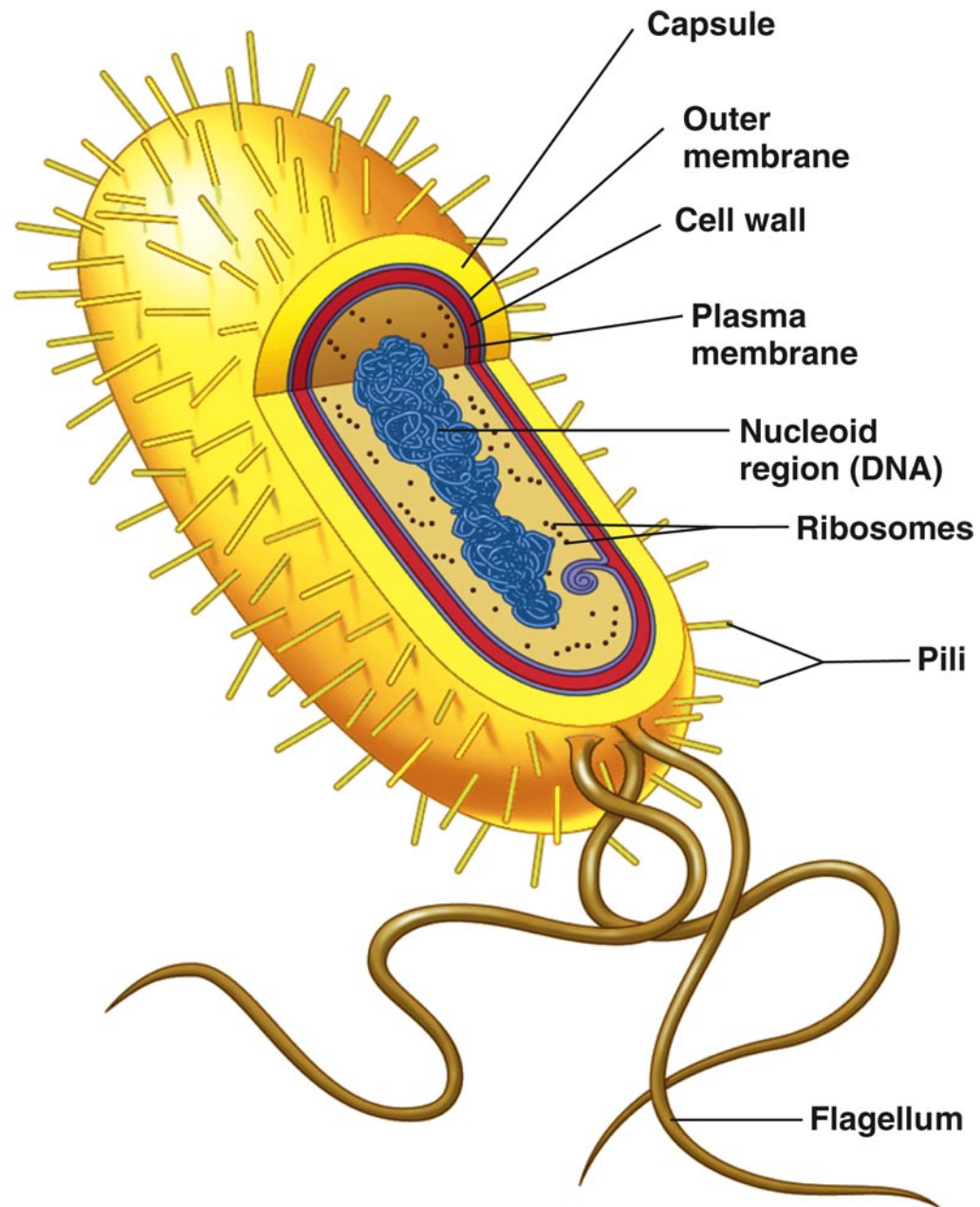
Smooth
endoplasmic
reticulum

Golgi
apparatus

Lysosome

Cytoplasm

Plasma membrane





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- Please write down a sentence of two about what you want to learn in this course....